

Appln No. 09/919,365
Amdt date October 19, 2005
Reply to Office action of July 19, 2005

REMARKS/ARGUMENTS

In the Office action dated July 19, 2005, claims 1-18 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,590,867 to Ash et al. ("Ash".)

Applicants appreciate the time and courtesy extended to Applicants' undersigned attorney during the brief telephone conversation relating to the application, in which the Ash reference was discussed with respect to the pending claims.

Claims 1, 5, 10, 14, and 18 are now amended to clarify aspects of the claims. No new matter has been added. Claims 1-18 are pending in the application. This amendment is filed with a Request for Continued Examination (RCE) in compliance with 37 CFR §1.114.

Claim 1 has been clarified to indicate that the link-level data comprises QoS information. (See, for example, Application, p. 7, lines 25-27, ("At the link-level, the bandwidth broker maintains information regarding the QoS state of each link in the network domain . . .") See also, for example, Application, Fig. 1:28.)

Claim 1 has also been clarified to specify that the paths within the network domain comprise a plurality of links. (See, for example, Application, p. 4, lines 10-11, (" . . . the path-level data further includes a set of critical links along the path, . . .") See also, for example, Application, p. 7, lines 28-33 ("At the path-level, the bandwidth broker maintains QoS state information regarding each path of the network domain, which is extracted and 'summarized' from the link QoS states of the links of the path. An example of a path QoS state is the available bandwidth along a path, which is the minimal available bandwidth among all its links."); Application, p. 8, lines 22-23 ("Quota allocation for a path can fail if a link along the path does not have sufficient quotas left."); Application, p. 8, lines 28-29 ("When a link is in a critical state, all paths traversing the link enter the critical state."); and Application, Fig. 1, Fig. 6.

Claim 1 has also been clarified, to indicate, "satisfying by the network server the flow request using the path-level data if the network server determines the network server can satisfy the flow request using the path-level data; and satisfying by the network server the flow request using the link-level data if the network server determines the network server cannot satisfy the

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flow request using the path-level data." (See, for example, Application, p. 9, lines 14-23 ("A bandwidth broker receives a flow request for a path at step 800. At step 802, the bandwidth broker determines if the path has sufficient quotas allocated to the path to satisfy the flow request using a path-level database 804. If so, the bandwidth broker admits the flow and allocates the flow request to the path and updates the path-level database. If the bandwidth broker determines that the path does not have sufficient quotas allocated to the path to satisfy the flow request at step 802, the bandwidth broker allocates flow at step 806 to the path using a link-level database 808.") (emphasis supplied); see also, Application, Fig. 7:602, 702, 704, 718. See also, for example, Application p. 10 line 8; p. 8 line 22 - p. 9 line 7; and Fig. 8:805.)

Applicants submit that Ash does not disclose or suggest the invention of claim 1.

Ash states, "The originating router selects a path having, for example, a minimum number of hops using the shortest path routing algorithm. Using the depth parameters discussed above, the originating router then checks whether the links forming the selected path have an available depth (bandwidth capacity) for the determined class of service." (Emphasis supplied) (Ash, col. 5, lines 13-18).

Claim 1, however, specifies "satisfying by the network server the flow request using the path-level data if the network server determines the network server can satisfy the flow request using the path-level data; and satisfying by the network server the flow request using the link-level data if the network server determines the network server cannot satisfy the flow request using the path-level data."

Therefore, applicants respectfully request that the rejection of claim 1 be withdrawn and that it be allowed.

Since claims 2-4 depend, directly or indirectly, from claim 1, they incorporate all of the terms and limitations of claim 1 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants request that the rejection of claims 2-4 be withdrawn and that they be allowed.

Claim 5 has been clarified to indicate that the link-level data comprises QoS information. (See, for example, Application, p. 7, lines 25-27, "At the link-level, the bandwidth broker

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maintains information regarding the QoS state of each link in the network domain . . .") See also, for example, Application, Fig. 1:28.)

Claim 5 has also been clarified to specify that the paths within the network domain comprise a plurality of links. (See, for example, Application, p. 4, lines 10-11, (" . . . the path-level data further includes a set of critical links along the path, . . .") See also, for example, Application, p. 7, lines 28-33 ("At the path-level, the bandwidth broker maintains QoS state information regarding each path of the network domain, which is extracted and 'summarized' from the link QoS states of the links of the path. An example of a path QoS state is the available bandwidth along a path, which is the minimal available bandwidth among all its links."); Application, p. 8, lines 22-23 ("Quota allocation for a path can fail if a link along the path does not have sufficient quotas left"); Application, p. 8, lines 28-29 ("When a link is in a critical state, all paths traversing the link enter the critical state.") and Application, Fig. 1, Fig. 6.

Claim 5 has also been clarified to indicate, "satisfying by the distributed network server the flow request using the path-level data if the network server determines the distributed network server can satisfy the flow request using the path-level data." (See, for example, Application, p. 9, lines 14-23 ("A bandwidth broker receives a flow request for a path at step 800. At step 802, the bandwidth broker determines if the path has sufficient quotas allocated to the path to satisfy the flow request using a path-level database 804. If so, the bandwidth broker admits the flow and allocates the flow request to the path and updates the path-level database. If the bandwidth broker determines that the path does not have sufficient quotas allocated to the path to satisfy the flow request at step 802, the bandwidth broker allocates flow at step 806 to the path using a link-level database 808.") (emphasis supplied); see also, Application, Fig. 7:602, 702, 704, 718. See also, for example, Application p. 10 line 8; p. 8 line 22 - p. 9 line 7; and Fig. 8:805.)

Applicants submit that Ash does not disclose or suggest the invention of claim 5. Claim 5 recites, in part, "providing a link-level database operably coupled to the central network server, the link level database including link-level data comprising QoS information for links in the paths within the network domain, each of the paths comprising a plurality of links." Further,

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claim 5, as amended, recites, "satisfying by the distributed network server the flow request using the path-level data if the network server determines the distributed network server can satisfy the flow request using the path-level data." Ash, col. 1, lines 36-38, as cited by the Office action states, "[i]n the OSPF protocol, for example, routers within the network exchange information with each other by a flooding technique so that each maintains a database of the network topology. Using the information in its stored database, each router selects a path for each packet in accordance with user-established cost metrics . . ." Therefore, applicants request that the rejection of claim 5 be withdrawn and that it be allowed.

Since claims 6-9 depend, directly or indirectly, from claim 5, they incorporate all of the terms and limitations of claim 5 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants request that the rejection of claims 6-9 be withdrawn and that they be allowed.

Claim 10 has been clarified to indicate that the link-level data comprises QoS information. (See, for example, Application, p. 7, lines 25-27, ("At the link-level, the bandwidth broker maintains information regarding the QoS state of each link in the network domain . . .") See also, for example, Application, Fig. 1:28.)

Claim 10 has also been clarified to specify that the path within the network domain comprises a plurality of links. (See, for example, Application, p. 4, lines 10-11, (" . . the path-level data further includes a set of critical links along the path . . ." See also, for example, Application, p. 7, lines 28-33 ("At the path-level, the bandwidth broker maintains QoS state information regarding each path of the network domain, which is extracted and 'summarized' from the link QoS states of the links of the path. An example of a path QoS state is the available bandwidth along a path, which is the minimal available bandwidth among all its links."); Application, p. 8, lines 22-23 ("Quota allocation for a path can fail if a link along the path does not have sufficient quotas left."), Application, p. 8, lines 28-29 ("When a link is in a critical state, all paths traversing the link enter the critical state."); and Application, Fig. 1, Fig. 6.

Claim 10 has also been clarified, to indicate, "satisfying the flow request using the path-level data if the flow request can be satisfied using the path-level data." (See, for example,

Application, p. 9, lines 14-23 ("A bandwidth broker receives a flow request for a path at step 800. At step 802, the bandwidth broker determines if the path has sufficient quotas allocated to the path to satisfy the flow request using a path-level database 804. If so, the bandwidth broker admits the flow and allocates the flow request to the path and updates the path-level database. If the bandwidth broker determines that the path does not have sufficient quotas allocated to the path to satisfy the flow request at step 802, the bandwidth broker allocates flow at step 806 to the path using a link-level database 808.") (emphasis supplied); see also, Application, Fig. 7:602, 702, 704, 718. See also, for example, Application p. 10 line 8; p. 8 line 22 - p. 9 line 7; and Fig. 8:805.)

Claim 10 recites, "satisfying the flow request using the link-level data if the flow request cannot be satisfied using the path-level data." As discussed in relation to claim 1, Ash column 5, lines 13-34 do not appear to disclose or suggest this limitation. Further, claim 10, as amended, recites, "a database including path-level data comprising Quality of Service information and link-level data comprising QoS information for a path within the network domain, each of the paths comprising a plurality of links." In view of the above, Ash does not disclose or suggest claim 10. Therefore, applicants request that the rejection of claim 10 be withdrawn and that it be allowed.

Since claims 11-13 depend, directly or indirectly, from claim 10, they incorporate all of the terms and limitations of claim 10 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants request that the rejection of claims 11-13 be withdrawn and that they be allowed.

Claim 14 has been clarified to specify that the paths within the network domain comprise a plurality of links. (See, for example, Application, p. 4, lines 10-11, ("... the path-level data further includes a set of critical links along the path, ...")) See also, for example, Application, p. 7, lines 28-33 ("At the path-level, the bandwidth broker maintains QoS state information regarding each path of the network domain, which is extracted and 'summarized' from the link QoS states of the links of the path. An example of a path QoS state is the available bandwidth along a path, which is the minimal available bandwidth among all its links."); Application p. 8, lines 22-23 ("Quota allocation for a path can fail if a link along the path does not have sufficient

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quotas left"); Application p. 8, lines 28-29 ("When a link is in a critical state, all paths traversing the link enter the critical state."); and Application, Fig. 1, Fig. 6.)

Claim 14 has also been clarified, to indicate, "satisfying the flow request using the path-level data if the flow request can be satisfied using the path-level data." (See, for example, Application, p. 9, lines 14-23 ("A bandwidth broker receives a flow request for a path at step 800. At step 802, the bandwidth broker determines if the path has sufficient quotas allocated to the path to satisfy the flow request using a path-level database 804. If so, the bandwidth broker admits the flow and allocates the flow request to the path and updates the path-level database. If the bandwidth broker determines that the path does not have sufficient quotas allocated to the path to satisfy the flow request at step 802, the bandwidth broker allocates flow at step 806 to the path using a link-level database 808.") (emphasis supplied); see also, Application, Fig. 7:602, 702, 704, 718. See also, for example, Application p. 10 line 8; p. 8 line 22 - p. 9 line 7; and Fig. 8:805.)

Ash at column 5, lines 13-34 does not appear to disclose or suggest, "satisfying the flow request using the link-level data if the flow request cannot be satisfied using the path-level data." In view of the above, applicants submit that Ash does not disclose or suggest the invention of claim 14. Therefore, applicants request that the rejection of claim 14 be withdrawn and that it be allowed.

Since claims 15-17 depend, directly or indirectly, from claim 14, they incorporate all of the terms and limitations of claim 14 in addition to other limitations, which together further patentably distinguish them over the cited references. Therefore, applicants request that the rejection of claims 15-17 be withdrawn and that they be allowed.

Claim 18 has been clarified to indicate that the link-level data includes QoS information for links within the network domain. (See, for example, Application, p. 7, lines 25-27, ("At the link-level, the bandwidth broker maintains information regarding the QoS state of each link in the network domain . . .") See also, for example, Application, Fig. 1:28.)

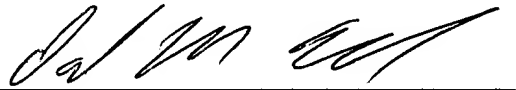
Ash, in view of the foregoing discussion, also does not appear to disclose or suggest, "path-level data for a path within the network domain" and "link-level data for links along the

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path, including: QoS information for links within the network domain" and "allocating by the network server bandwidth to each link in the set of critical links from unused bandwidth reclaimed from a another path on each link if the path is in a critical state" as specified by claim 18. Accordingly, claim 18 is also allowable.

In view of the forgoing remarks, applicants respectfully allowance of the application. If there are any remaining issues that can be addressed over the telephone, the Examiner is invited to call applicants' attorney at the number listed below.

Respectfully submitted,
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